

Pome Fruits—Chemical Control

Grape Mealybug Control

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Mature pear trees were sprayed with a handgun operating at 600 psi to evaluate pesticides for control of GMB. Plots consisted of 8 single-tree replicates in randomized block design. Treatments were evaluated by counting GMB on 10 shoots per replicate on 2 June and by rating 25 fruits per replicate at harvest for presence of nymphs in the calyx and fruit russet from honeydew. All early season treatments except AC 303,630 were applied twice, at clusterbud (CB) stage (26 Mar) and petal fall (PF) stage (17 Apr) of tree development. AC 303,630 was applied only once at petal fall stage (17 Apr). Three of the treatments were applied only at the time of summer generation crawler activity (1 Jul).

Lorsban provided the best control of shoot infestations during first generation. Guthion, Imidan and NTN 33893 were also effective. AC 303,630 and AgriDyne as used here did not provide adequate control. AC 303,630 was not available in time for the clusterbud application and may have been more effective if applied as were the other materials. A single summer spray provided better control of calyx infestations than two early-season sprays. Sevin and Lorsban were the most effective of the materials tested as summer sprays. Metasystox-R as a summer spray caused russet rings on 3.5 percent of the fruit

Table 1.

| Treatment | Application time ¹ | Rate/ 100 gal | Mean GMB per shoot | % calyx infestation | % fruit russet |
|------------------------------|-------------------------------|------------------|--------------------------|------------------------|-------------------|
| Lorsban 50WP | CB & PF | 12 oz | 0.000a | 40.5bc | 5.5a |
| Guthion 35WP | CB & PF | 12 oz | 0.438b | 55.5c | 9.5a |
| Imidan 50WP | CB & PF | 1.5 lb | 0.575b | 37.5b | 4.5a |
| NTN 33893 240 g/liter F | CB & PF | 7.2 oz | 0.613b | 40.5bc | 9.5a |
| AC 303,630 3SC (360 g/liter) | PF | 7 oz | 4.675c | 83.5d | 26.5bc |
| AgriDyne 3% E + B1956 | CF & PF | 5 oz 4 oz | 5.825c | 84.5d | 26.5bc |
| Metasystox R 2EC | 1 Jul | 1 pt | | 49.0bc | 16.0abc |
| Sevin 4F | 1 Jul | 1 pt | | 6.5a | 14.0ab |
| Lorsban 50WP | 1 Jul | 12 oz | | 8.5a | 7.0a |
| Untreated control | | | 9.438d | 77.5d | 29.0c |

Means within columns followed by the same letter are not significantly different (P=0.05; Fisher's Protected LSD). Data for GMB on shoots were transformed for mean separation using sqrt (x + 0.1).

¹Application times: CB=clusterbud stage of tree development; PF=petal fall stage of tree development; 1 Jul=time of summer crawler activity.

Chemicals Tested

AC 303,630 3S; 4-bromo-2-(4-chlorophenyl)-1-(ethoxymethyl)-5-(trifluoromethyl)pyrrole-3-carbonitrile (IUPAC); American Cyanamid Co., 1 Cyanamid Plaza, Wayne, NJ 07470.

Agri-Mek .15EC; avermectin B₁; Merck, Sharp & Dohme, P.O. Box 2000, Rahway, NJ 07065.

AgriDyne 3% E; azadirachtin; AgriDyne Technologies Inc., 417 Wakara Way, Salt Lake City, UT 84108.

BAS 300 75% WP; composition not available, BASF Corp. Chemical Division, Agricultural Research Center, P.O. Box 13528, Research Triangle Park, NC 27709-3528X.

Carzol 2L; formetanate hydrochloride, NOR-AM Chemical Co., 3509 Silverdale Rd., P.O. Box 7495, Wilmington, DE 19803.

Diazinon 50% WP; diazinon, Ciba-Geigy Agricultural Division, P.O. Box 18300, Greensboro, NC 17419-8300.

Guthion 35% WP; azinphosmethyl; Miles Inc. Agricultural Division, P.O. Box 4913, Hawthorn Rd., Kansas City, MO 64120.

Imidan 50% WP; phosmet; Gowan Co. Agricultural Chemicals, 12300 East County 8th Street, Yuma, AZ 85364.

Lorsban 50% WP; chlorpyrifos; DowElanco, P.O. Box 708, Greenfield, IN 46140.

NTN 33893 240FS; Chemistry confidential; Miles Inc., Agricultural Division, P.O. Box 4913, Hawthorn Rd., Kansas City, MO 64120.

Orthene 75% WP; acephate, Valent U. S. A. Corp., 1333 N. California Blvd., #60, P.O. Box 8025, Walnut Creek, CA 94596-8025.

Pennacp-M 2FM; methyl parathion, Atochem North America Inc., 1504 Pine Needle Place, Tifton GA 31794.

Sevin 4F; carbaryl; Rhone-Poulenc Ag. Co., 2 T. W. Alexander Drive, P.O. Box 12014, Research Triangle Park, NC 27709.

Supracide 2E; methidathion, Ciba-Geigy Agricultural Division, P.O. Box 18300, Greensboro, NC 17419-8300.

Sylgard 309; adjuvant; Dow Corning Corp, Midland, MI 48686-0994.

Thiodan 3EC; endosulfan, FMC Corp., Agricultural Chemicals Group, 100 Niagara Street, Middleport, NY 14105.

Vydate 2L; oxamyl, DuPont, E. I. de Nemours & Inc., Agricultural Chemicals Dept., Walker's Mill Bldg., Barley Mill Plaza, P.O. Box 80038, Wilmington, DE 19880-8038.